

FIG. 1

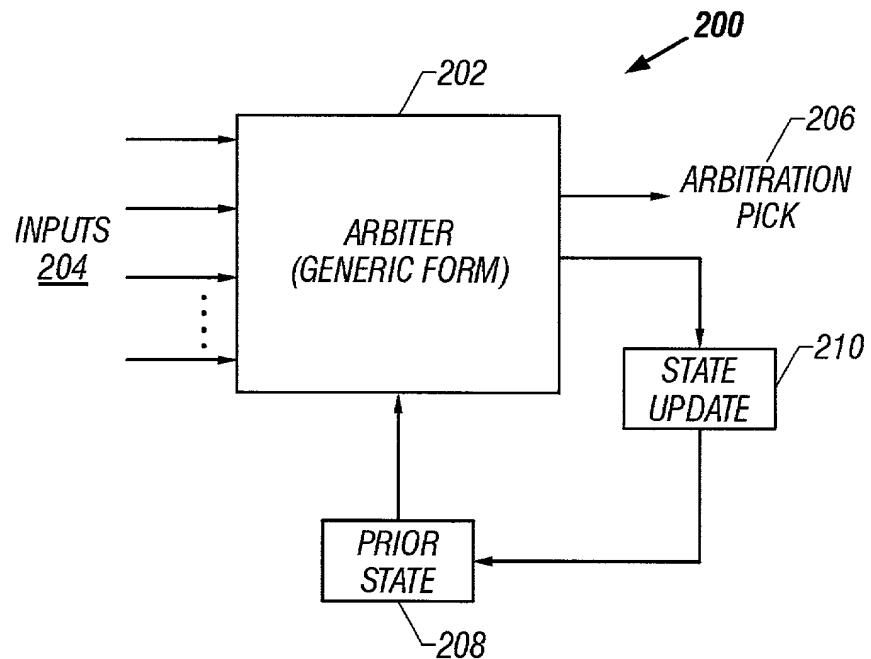


FIG. 2

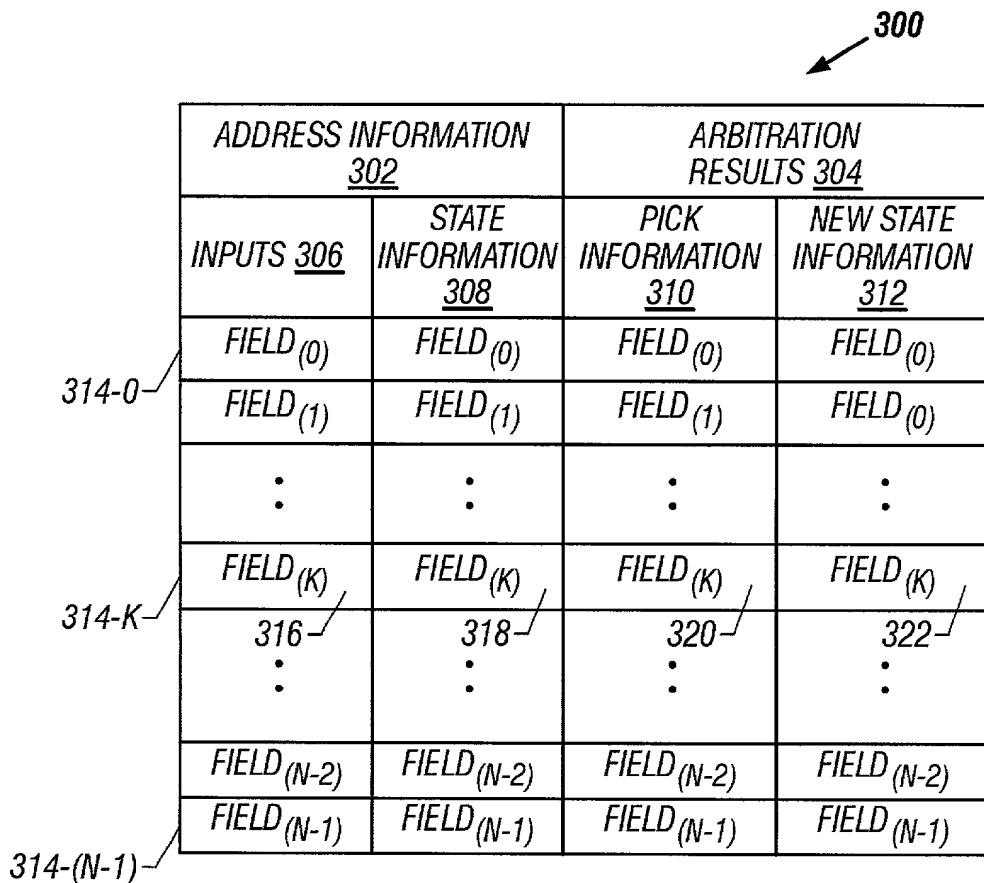


FIG. 3

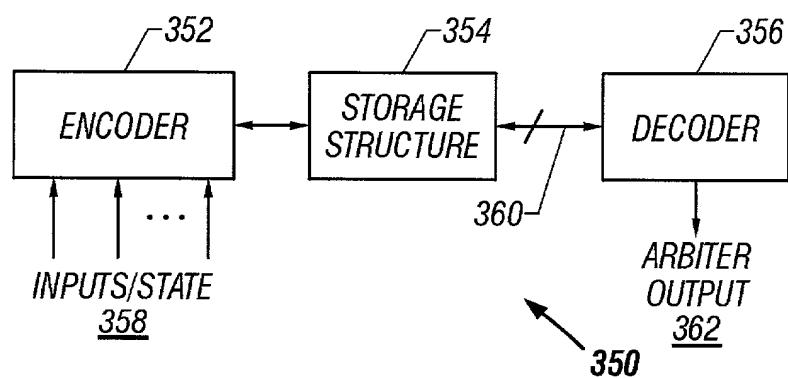


FIG. 4

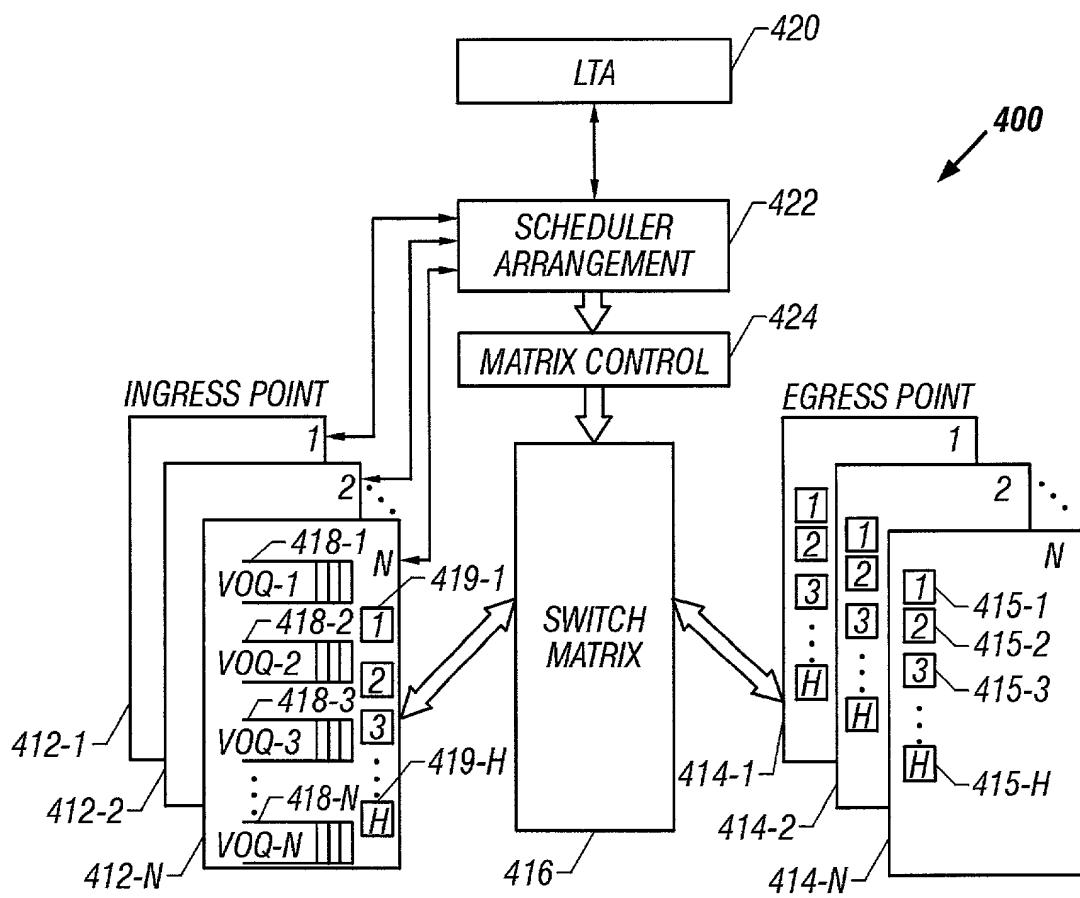


FIG. 5

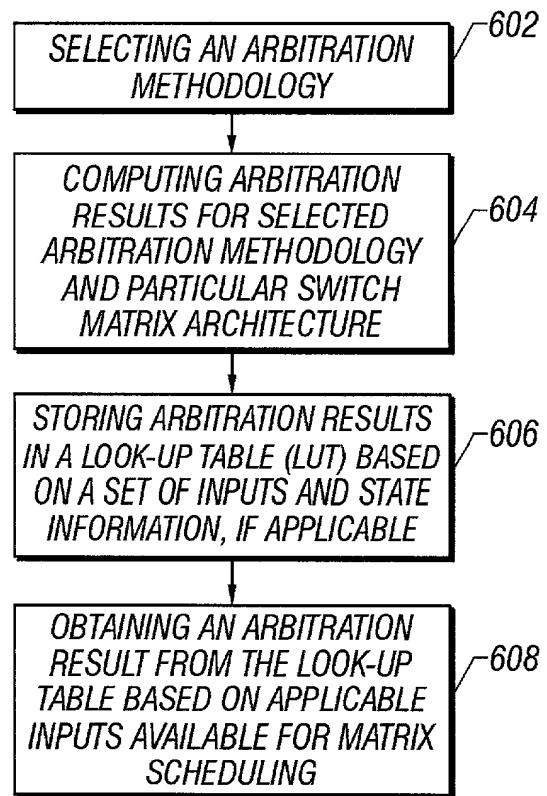


FIG. 6

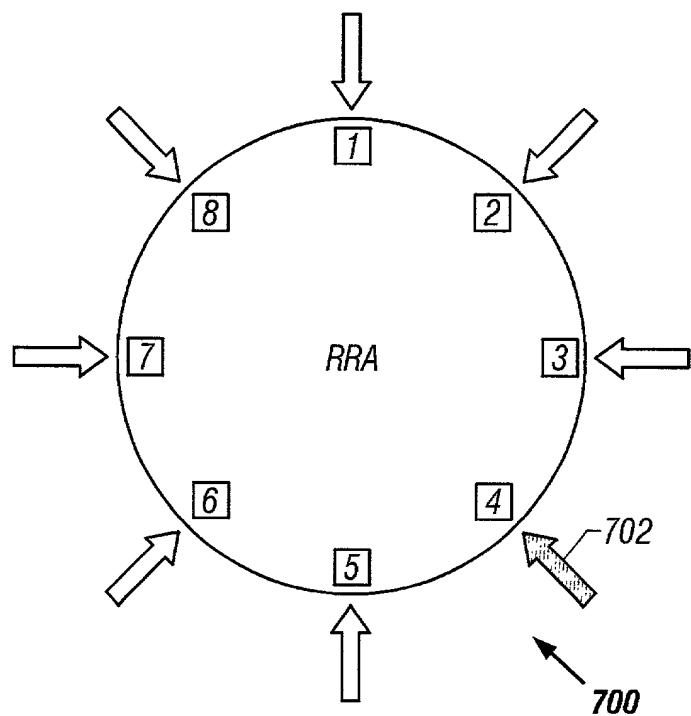


FIG. 7

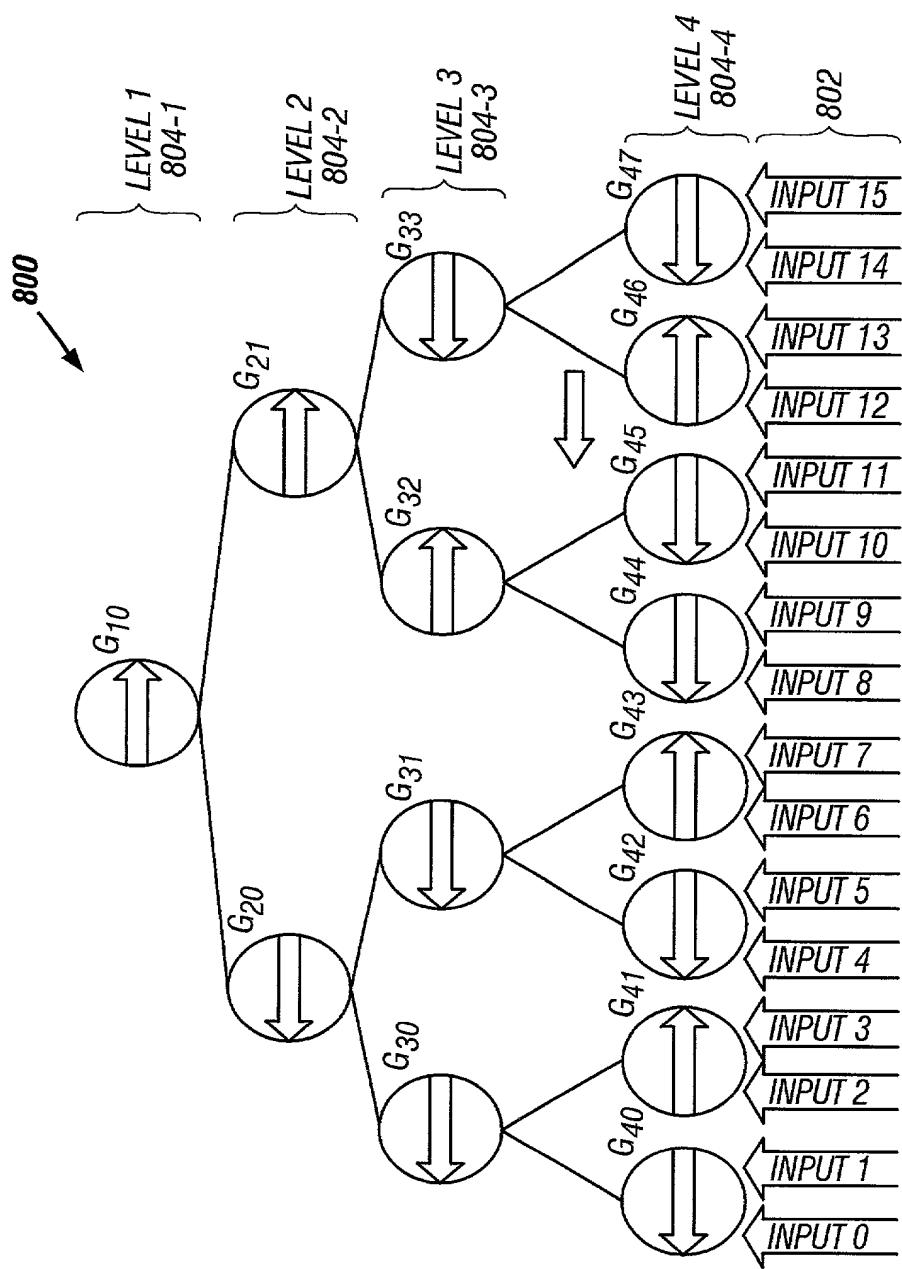


FIG. 8

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900A

RRA					
INPUTS	STATE INFO	ADDRESS WIDTH	ROW NUMBER	ROW WIDTH	TABLE SIZE (BITS)
N	LOG(N)	$2^{\lceil \log(N) \rceil}$	$2^{\lceil \text{ADR WIDTH} \rceil}$	PICK	ROW WIDTH*NUMBER
4	2	6	64	2	128
8	3	11	2048	3	6144
16	4	20	1048576	4	4194304
32	5	37	$37137439E+11$	5	$6.87195E+11$
64	6	70	$70118059E+21$	6	$7.08355E+21$

FIG. 9A

900B

BTA					
INPUTS	STATE INFO	ADDRESS WIDTH	ROW NUMBER	ROW WIDTH	TABLE SIZE (BITS)
N	N-1	$2^{\lceil \text{ADR WIDTH} \rceil}$	$2^{\lceil \text{ADR WIDTH} \rceil}$	PICK+FLAGS	ROW WIDTH*NUMBER
4	3	7	128	7	896
8	7	15	32768	15	491520
16	15	31	2147483648	31	66571993088
32	31	63	$63922337E+18$	63	$5.81072E+20$
64	63	127	$127170141E+38$	127	$2.16079E+40$

FIG. 9B

Diagram illustrating the state transition logic for a memory system, showing the relationship between ADDRESS, INPUT, PTR, RESULT, PICK, and NEW STATE.

FIG. 10A: A 25x6 table showing the state transition logic. The columns are labeled: ADDRESS, INPUT, PTR, RESULT, PICK, and NEW STATE. The rows are indexed by ADDRESS (0000 to 1111) and INPUT (00 to 11).

ADDRESS	INPUT	PTR	RESULT	PICK	NEW STATE
0000	00	XX	00		
0000	01	XX	01		
0000	10	XX	10		
0000	11	XX	11		
0001	00	00	01		
0001	01	00	01		
0001	10	00	01		
0001	11	00	01		
0010	00	01	10		
0010	01	01	10		
0010	10	01	10		
0010	11	01	10		
0011	00	00	01		
0011	01	01	10		
0011	10	00	01		
0011	11	00	01		
0100	00	10	11		
0100	01	10	11		
0100	10	10	11		
0100	11	10	11		
0101	00	00	01		
0101	01	10	11		
0101	10	10	11		
0101	11	00	01		
0110	00	01	10		
0110	01	01	10		
0110	10	10	11		
0110	11	01	10		
0111	00	00	01		
0111	01	01	10		
0111	10	10	11		
0111	11	00	01		
1000	00	11	00		
1000	01	11	00		
1000	10	11	00		
1000	11	11	00		

FIG. 10B: A 16x4 table showing the state transition logic for the PTR and NEW STATE columns. The rows are indexed by ADDRESS (0001 to 1111) and INPUT (00 to 11).

ADDRESS	INPUT	PTR	NEW STATE
0001	00	00	01
0001	01	11	00
0001	10	11	00
0001	11	11	00
0010	00	01	10
0010	01	01	10
0010	10	10	00
0010	11	11	00
0011	00	00	01
0011	01	01	10
0011	10	00	01
0011	11	11	00
0100	00	10	11
0100	01	10	11
0100	10	10	11
0100	11	10	11
0101	00	00	01
0101	01	10	11
0101	10	10	11
0101	11	11	00
0110	00	01	10
0110	01	01	10
0110	10	10	11
0110	11	01	10
0111	00	00	01
0111	01	01	10
0111	10	10	11
0111	11	11	00

FIG. 10A

FIG. 10B

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1102	1108	1110	1104	1112
1106	ADDRESS	RESULT		
	INPUT	STATE	PICK	NEW STATE
	0000	000	XX	000
	0000	001	XX	001
	0000	010	XX	010
	0000	011	XX	011
	0000	100	XX	100
	0000	101	XX	101
	0000	110	XX	110
	0000	111	XX	111
	0001	000	00	000
	0001	001	00	000
	0001	010	00	010
	0001	011	00	010
	0001	100	00	000
	0001	101	00	000
	0001	110	00	010
	0001	111	00	010
	0010	000	01	001
	0010	001	01	001
	0010	010	01	011
	0010	011	01	011
	0010	100	01	001
	0010	101	01	001
	0010	110	01	011
	0010	111	01	011
	0011	000	01	001
	0011	001	00	000
	0011	010	01	011
	0011	011	00	010
	0011	100	01	001
	0011	101	00	000
	0011	110	01	011
	0011	111	00	010
	0100	000	10	100
	0100	001	10	101
	0100	010	10	100
	0100	011	10	101
	0100	100	10	100
	0100	101	10	101
	0100	110	10	100
	0100	111	10	101
	0101	000	10	100

FIG. 11A

0101	001	10	101
0101	010	10	100
0101	011	10	101
0101	100	00	000
0101	101	00	000
0101	110	00	010
0101	111	00	010
0110	000	10	100
0110	001	10	101
0110	010	10	100
0110	011	10	101
0110	100	01	001
0110	101	01	001
0110	110	01	011
0110	111	01	011
0111	000	10	100
0111	001	10	101
0111	010	10	100
0111	011	10	101
0111	100	01	001
0111	101	00	000
0111	110	01	011
0111	111	00	010
1000	000	11	110
1000	001	11	111
1000	010	11	110
1000	011	11	111
1000	100	11	110
1000	101	11	110
1000	110	11	110
1000	111	11	111
1001	000	11	110
1001	001	11	111
1001	010	11	110
1001	011	11	111
1001	100	00	000
1001	101	00	000
1001	110	00	110
1001	111	00	110
1010	000	11	110
1010	001	11	111
1010	010	11	110
1010	011	11	111
1010	100	01	001

FIG. 11B

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1010	101	01	001
1010	110	01	011
1010	111	01	011
1011	000	11	110
1011	001	11	111
1011	010	11	110
1011	011	11	111
1011	100	01	001
1011	101	00	000
1011	110	01	011
1011	111	00	010
1100	000	11	110
1100	001	11	111
1100	010	10	100
1100	011	10	101
1100	100	11	110
1100	101	11	111
1100	110	10	100
1100	111	10	101
1101	000	11	110
1101	001	11	111
1101	010	10	100
1101	011	10	101
1101	100	00	000
1101	101	00	000
1101	110	00	010
1101	111	00	010
1110	000	11	110
1110	001	11	111
1110	010	10	100
1110	011	10	101
1110	100	01	001
1110	101	01	001
1110	110	01	011
1110	111	01	011
1111	000	11	110
1111	001	11	111
1111	010	10	100
1111	011	10	101
1111	100	01	001
1111	101	00	000
1111	110	01	011
1111	111	00	010

1202	ADDRESS	RESULT	1204
1206	INPUT	PICK	1208
0000		XX	
0001		00	
0010		01	
0011		00	
0100		10	
0101		00	
0110		01	
0111		00	
1000		11	
1001		00	
1010		01	
1011	00		
1100		10	
1101		00	
1110		01	
1111		00	

FIG. 12

FIG. 11C